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APPLICATION NO. 10/669,162
SHEET 1 OF 11

Information Disclosure Statement List

(Use as many sheets as necessary)

Complete if Known	
Application Number	10/669,162
Filing Date	September 22, 2003
First Named Inventor	Breaker et al.
Confirmation No:	4368
Examiner Name	Unassigned

U.S. PATENT DOCUMENTS

Examiner's Initials	Cite No.	Document No.	Date	Name	Class	Subclass	Filing Date (if appropriate)
J3	A1	6,831,171	12/04/04	Breaker et al.			
	A2	6,001,411	12/14/99	Brennan et al.			
	A3	5,861,288	01/19/99	Usman et al.			
	A4	5,854,038	12/29/98	Sullenger et al.			
	A5	5,834,186	11/10/98	Shaji et al.			
	A6	5,807,718	09/15/98	Usman et al.			
	A7	5,624,803	4/29/97	Noonberg et al.			
	A8	5,334,711	08/02/94	Sproat et al.			
	A9	2004-0072783	04/15/04	Breaker et al.			

FOREIGN PATENT DOCUMENTS

Examiner's Initials	Cite No.	Foreign Patent Document Country Code-Number-Kind Code	Date	Name	Translation Yes/No
J3	A10	WO 99/54459	10/28/99	Thompson et al.	
	A11	WO 99/16871	04/08/99	Max Planck Gesellschaft	
	A12	WO 98/43993	10/08/98	Breaker	
	A13	WO 97/26270	07/24/98	Wincott et al.	
	A14	WO 96/19836	06/20/96	Biegelman et al.	
	A15	WO 96/10390	04/11/96	Ansell et al.	
	A16	WO 96/10391	04/11/96	Choi et al.	
	A17	WO 96/10392	04/11/96	Holland et al.	
	A18	WO 96/10395	04/11/96	Holland et al.	
	A19	WO 95/11910	05/04/95	Dudzycz et al.	
	A20	WO 95/06731	03/09/95	Usman et al.	
	A21	WO 94/02595	02/03/94	Sullivan et al.	
	A22	WO 93/23569	11/25/93	Draper et al.	
	A23	WO 93/15187	08/05/93	Usman et al.	
	A24	WO 92/07065	04/03/92	Eckstein et al.	
	A25	WO 91/03162	03/21/91	Rossi et al.	
	A26	WO 89/02439	03/23/89	Arnold et al.	

NON-PATENT DOCUMENTS

Examiner's Initials	Cite No.	Non-Patent Citations (include Author, Title, Publisher, Relevant Pages, Date and Place of Publication)
J3	A27	Agrawal et al., "Antisense oligonucleotides: toward clinical trials" TIBTECH 1996. 14:376-380
	A28	Auger, et al., "The metIC operon involved in methionine biosynthesis in Bacillus subtilis is controlled by transcription antitermination." Microbiology 2002 Feb;148:507-518
	A29	Babitzke and Gollnick, "Posttranscription initiation control of tryptophan metabolism in Bacillus subtilis by the trp RNA-binding attenuation protein (TRAP), anti-TRAP, and RNA structure." J Bacteriol. 2001 Oct;183(20):5795-5802

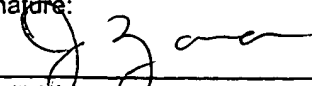

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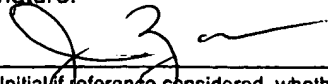
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83	A30	Bartel and Szostak "Isolation of new ribozymes from a large pool of random sequences" Science 261:1411-1418 (1993)	
	A31	Beaucage and Leyer, "The functionalization of oligonucleotides via phosphoramidite derivatives" Tetrahedron 49:1925-1963 (1993)	
	A32	Beaudry and Joyce, "Minimum secondary structure requirements for catalytic activity of a self-splicing group I intron," Biochemistry 29:6534-5639 (1990)	
	A33	Beaudry and Joyce, Directed evolution of an RNA enzyme" Science 257:635-641 (1992)	
	A34	Been et al. "Secondary structure of the self-cleaving RNA of hepatitis delta virus: Applications to catalytic RNA design," Biochemistry 31:11843-11852 (1992)	
	A35	Beigelman et al. "Synthesis of 1-Deoxy-D-Ribofuranose Phosphoramidite & the incorporation of abasic nucleotides in stem-loop II of a hammerhead ribozyme," Bioorganiz & Medicinal Chemistry Letters 4:1715-1720 (1994)	
	A36	Beigelman et al. "Chemical modification of hammerhead ribozymes" J. Biol. Chem. 270:25702-25708 (1995)	
	A37	Bellon et al. "Amino-linked ribozymes: post-synthetic conjugation of half-ribozyme," Nucleosides & Nucleotides 16:951-954 (1997)	
	A38	Bellon et al. "Post-synthetically ligated ribozymes: an alternative approach to iterative solid phase synthesis," Bioconjugated Chem. 8:204-212 (1997)	
	A39	Benner et al., "Modern metabolism as a palimpsest of the RNA world." Proc Natl Acad Sci U S A. 1989 Sep;86(18):7054-7058	
	A40	Benseler et al. "Hammerhead-like molecules containing non-nucleoside linkers are active RNA catalysts." J. Am. Chem. Soc. 115:8483-8484 (1993)	
	A41	Boy et al., "Isolation and identification of mutants constitutive for aspartokinase III synthesis in Escherichia coli K 12." Biochimie. 1979;61(10):1151-1160.	
	A42	Braasch and Corey "Novel antisense and peptide nucleic acid strategies for controlling gene expression" Biochem. 41(14):4503-4510 (2002)	
	A43	Braasch, Biochemistry 2002 April; 41(15):4503-4510	
	A44	Branch, "A good antisense molecule is hard to find" Trends Biochem. Sci 1998 Feb; 23(2):45-50	
	A45	Breaker "Catalytic DNA: in training and seeking employment " Nature Biotech. 17:422-423 (1999)	
	A46	Breaker "Engineered Allosteric Ribozymes as Biosensor Components." Curr. Opin. Biotechnol. (2002) 13:31-39 Feb 2002	
	A47	Breaker and Joyce, "Inventing and improving ribozyme function : rational design versus iterative selection methods," TIBTECH 12:265-275 (1994)	
	A48	Breaker and joyce" a DNA enzyme that cleaves RNA" Chem. Bio 1:223-229 (1994)	
	A49	Breaker et al. "A DNA enzyme with Mg2+ -dependent RNA phosphoresterase activity" Chem Biol. 2(10):655-660 (1995)	
	A50	Breaker et al. "In vitro selection of self-cleaving ribozymes and deoxyribozymes. <u>Horizon Scientific Press, Intracellular Ribozyme Applications: Principles and Protocols</u> , chap. 1 pp. 1-19 wyonham , GB (1999)	
	A51	Breaker, " Are engineered proteins getting competition from RNA?" Current Opinion in Biotechnology 7:442-448 (1996)	
	A52	Breaker, "In Vitro Selection of Catalytic Polynucleotides." Chem Rev. 1997 Apr 1;97(2):371-390	
Examiner Signature:		Date Considered:	
83		12-18-06	
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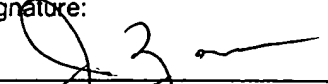
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83	A53	Brennan et al "Two-dimensional parallel array technology as a new approach to automated combinatorial solid phase organic synthesis." Biotech. Bioeng. 61:33-45 (1998)	
	A54	Brown and Zou, "Thermolysis of coenzymes B ₁₂ at physiological temperatures: activation parameters for cobalt-carbon bond homolysis and a quantitative analysis of the perturbation of the homolysis equilibrium by the ribonucleoside triphosphate reductase from Lactobacillus leichmannii." J. Inorg. Biochem. (1999) 77, 185-195	
	A55	Brown et al., "Conformational studies of 5'-deoxyadenosyl-13-epicobalamin, a coenzymatically active structural analog of coenzyme B ₁₂ ." Polyhedron 17, 2213 (1998)	
	A56	Burgin et al. "Chemically modified hammerhead ribozymes with improved catalytic rates" Biochemistry 35:14090-14097 (1996)	
	A57	Cadwell and Joyce "Mutagenic PCR" PCR Methods Appl. 3(6):S136-140 (1994)	
	A58	Caruthers et al. "Chemical synthesis of deoxyligonucleotides and deoxyligonucleotide analogs" Methods Enzymol. 211:3-19 (1992)	
	A59	Castanotto et al. "Intracellular expression and function of antisense catalytic RNAs," Methods Enzymol. 313:401-20, 2000	
	A60	Cech, "Ribozyme engineering" Current Opinion in Structural Biology 2:605-609 (1992)	
	A61	Cech, "Ribozymes and their medical implications," JAMA 260-3030-3034 (1988)	
	A62	Chartrand et al "An oligodeoxycyribonucleotide that supports catalytic activity in the hammerhead ribozyme domain." Nucleic Acid Res. 23(20):4092-4096 (1995)	
	A63	Chen et al. "Multitarget-ribozyme directed to cleave at up to nine highly conserved HIV-1 env RNA regions inhibits HIV-1 replaicion -potential effectiveness against most presently sequenced HIV-1 isolates," Nucleic Acids Res. 20:4581-4589 (1992)	
	A64	Chowira and Burke, "Extensive phosphorothioate substitution yields highly actie and nuclease-resistant hairpin ribozymes," Nucleic Acids Res. 20:2835-2840 (1994)	
	A65	Chowira et al. "In vitro and in vivo comparison of hammerhead, hairpin and hepatitis delta virus self-processing ribozyme cassettes" J. Biol. Chem. 269:25856-25864 (1994)	
	A66	Christiansen, et al, "Xanthine metabolism in Bacillus subtilis: characterization of the xpt-pbuX operon and evidence for purine- and nitrogen-controlled expression of genes involved in xanthine salvage and catabolism." J Bacteriol. 1997 Apr;179(8):2540-2550	
	A67	Christoffersen and Marr, "Ribozymes as human therapeutic agents" J. Med. Chem 38:2023-2037 (1995)	
	A68	Cload and Schepartz, "Polyether tethered oligonucleotide probes" J. Amer. Chem Soc. 113:6324-6326 (1991)	
	A69	Couture and Stinchcomb, "anti-gene therapy: the use of ribozymes to prohibit gene function." Trends in Genetics 12:510-515 (1996)	
	A70	Cuenoud and Szostak "A DNA metalloenzyme with DNA ligase activity" Nature 375:611-614 (1995)	
	A71	Desai et al, "Genetic screens and selections for small molecules based on a synthetic riboswitch that activates protein translation," J. Am. Chem Soc. 126:13247-13254 (2004)	
	A72	Dock-Bregeon and Moras, "Conformational changes and dynamics of tRNAs: evidence from hydrolysis patterns" Cold Spring Harbor Symp. Quant. Biol. 52, 113-121 (1987)	
✓	A73	Dropulic et al., "Functional characterization of a U5 Ribozyme: intracellular suppression of human immunodeficiency virus type I expression," J. Virol. 66:1432-1441 (1992)	

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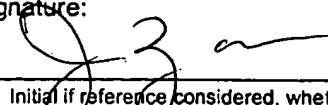
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83	A74	Durand et al. "Circular dichroism studies of an oligodeoxyribonucleotide containing a hairpin loop made of a hexaethylene glycol chain: conformation and stability," Nucleic Acids. Res. 18:6353-6359 (1990)	
	A75	Ebbole et al., "Cloning and characterization of a 12-gene cluster from Bacillus subtilis encoding nine enzymes for de novo purine nucleotide synthesis." J Biol Chem. 1987 Jun 15;262(17):8274-87	
	A76	Elroy-Stein and Moss, "Cytoplasmic expression system based on constitutive synthesis of bacteriophage T7 RNA polymerase in mammalian cells" Proc. Natl. Acad. Sci. 87:6743-6747 (1990)	
	A77	Emilsson and Breaker (2002) "Deoxyribozymes: New Activities and New Applications" Cell. Mol. Life Sci. 59:596-607	
	A78	Epshtein et al., "The riboswitch-mediated control of sulfur metabolism in bacteria." Proc Natl Acad Sci U S A. 2003 Apr 29;100(9):5052-5056	
	A79	Famulok, "Oligonucleotide aptamers that recognize small molecules." Curr Opin Struct Biol. 1999 Jun;9(3):324-329	
	A80	Fedor and Uhlenbeck, Kinetics of intermolecular cleavage by hammerhead ribozymes, " Biochemistry 31:12042-12054 (1992)	
	A81	Ferentz and Verdine, "Disulfide cross-linked oligonucleotides" J. Am. Chem. Soc. 113:4000-4002 (1991)	
	A82	Forster and Symons, "Self cleavage of plus and minus RNAs of a virusoid and a structural model for the active sites," Cell 49:211-220 (1987)	
	A83	Freier et al. "improved free-energy parameters for predictions of RNA duplex stability" Proc. Natl. Acad. Sci 83:9373-9377 (1986)	
	A84	Gao and Huang "Cytoplasmic expression of a reporter gene by co-delivery of T7 RNA polymerase and T7 promoter sequence with cationic liposomes" Nucleic Acids. Res. 21:2867-2872 (1993)	
	A85	Gelfand et al., "A conserved RNA structure element involved in the regulation of bacterial riboflavin synthesis genes" Trends Gen. 15, 439-442 (1999)	
	A86	Gerwitz et al., "Facilitating oligonucleotide delivery: helping antisense deliver on its promise" 1996. Proc Natl Acad. Sci. 93:3161-3163	
	A87	Geyer and Sen "Evidence for the metal cofactor independence of an RNA phosphodiester cleaving DNA enzyme" Chem. Biol. 4:579-593 (1997)	
	A88	Gold et al. "Diversity of Oligonucleotide functions: Ann. Rev. Biochem. 64:763-797(1995)	
	A89	Good et al. "expression of small, therapeutic RNAs in human nuclei" Gene Therapy 4:45-54 (1997)	
	A90	Gottesman, "Stealth regulation: biological circuits with small RNA switches." Genes Dev. 2002 Nov 15;16(22):2829-2842.	
	A91	Grundy and Henkin, "The S box regulon: a new global transcription termination control system for methionine and cysteine biosynthesis genes in gram-positive bacteria." Mol Microbiol. 1998 Nov;30(4):737-749	
✓	A92	Grundy, et al., "tRNA-mediated transcription antitermination in vitro: codon-anticodon pairing independent of the ribosome." Proc Natl Acad Sci U S A. 2002 Aug 20;99(17):11121-11126	

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93	A93	Guo and Collins, "Efficient trans-cleavage of a stem-loop RNA substrate by a ribozyme derived from Neurospora VS RNA" EMBO J. 14:368-376 (1995)	
	A94	Gusarov and Nudler, "The mechanism of intrinsic transcription termination." Mol Cell. 1999 Apr;3(4):495-504	
	A95	Hammann et al "Length variation of helix II in a hammerhead ribozyme and its influence on cleavage activity" Antisense and Nucleic Acid Drug Dev. 9:25-31 (1999)	
	A96	Hannon, "RNA interference." Nature. 2002 Jul 11;418(6894):244-51	
	A97	Harvey et al. "Inhibition of translation by RNA-small molecule interactions" RNA :452-463 (2002)	
	A98	Henkin and Yanofsky, "Regulation by transcription attenuation in bacteria: how RNA provides instructions for transcription termination/antitermination decisions." Bioessays. 2002 Aug;24(8):700-707	
	A99	Henkin, "Transcription termination control in bacteria." Curr Opin Microbiol. 2000 Apr;3(2):149-153.	
	A100	Henkin, "tRNA-directed transcription antitermination." Mol. Microbiol. 3, 381-387 (1994)	
	A101	Henry et al. "Using linkers to investigate the spatial separation of the conserved nucleotides A9 and G12 in the hammerhead ribozyme: biochimica et biophysica acta 1219:405-412 (1994)	
	A102	Hermann and Patel, "Adaptive recognition by nucleic acid aptamers." Science 287, 820-825 (2000)	
	A103	Hertel et al. "Numbering System for the hammerhead" Nucleic Acids. Res. 20:3252 (1992)	
	A104	Hesselberth and Ellington, "A (ribo) switch in the paradigms of genetic regulation." Nat Struct Biol. 2002 Dec;9(12):891-893	
	A105	Hunziker et al. "Nucleic Acid analogues: synthesis and properties, in Modern synthetic methods," VCH, 331-417, 1995	
	A106	Ishiwata et al. "Physical-chemistry characteristics and biodistribution of poly(ethylene glycol) coated liposomes using poly(oxyethylene) coholesteryl ether," Chem. Pharm. Bull. 43:1005-1011 (1995)	
	A107	Izant and Weintraub, "constitutive and conditional suppression of exogenous and endogenous genes by anti-sense RNA," Science 229:345-352 (1985)	
	A108	Jadhav and Yarus "Coenzymes as coribozymes." Biochimie. 2002 Sep;84(9):877-888	
	A109	Jarmer, et al., "Transcriptome analysis documents induced competence of Bacillus subtilis during nitrogen limiting conditions." FEMS Microbiol Lett. 2002 Jan 10;206(2):197-200	
	A110	Jaschke et al., "Automated incorporation of polyethylene glycol into synthetic oligonucleotides," Tetrahedron Letters 34:301-304 (1993)	
	A111	Jeffares et al., "Relics from the RNA world." J Mol Evol. 1998 Jan;46(1):18-36	
	A112	Jefferies and Symons, "A catalytic 13-mer ribozyme," Nucleic Acids Res. 17:1371-1377 (1989)	
	A113	Johansen, "Definition of a second Bacillus subtilis pur regulon comprising the pur and xpt-pbuX operons plus pbuG, nupG (yxjA), and pbuE (ydhL)." J Bacteriol. 2003 Sep;185(17):5200-5209	
	A114	Joseph and Burke, "Optimization of an anti-HIV hairpin ribozyme by in vitro selection," J. Biol. Chem. 268:24515-24518 (1993)	
	A115	Joyce et al. "Amplification, mutation and selection of catalytic RNA," Gene 82:83-87 (1989)	
	A116	Joyce et al. "Directed molecular evolution," Scientific American 267:90-97 (1992)	
	A117	Kashani-Sabet et al. "Reversal of the malignant phenotype by an anti-ras ribozyme," Antisense Research & Development 2:3-15 (1992)	

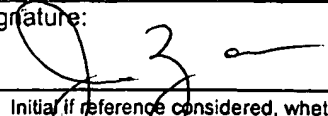
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83	A118	Kil et al., "Riboflavin operon of Bacillus subtilis: unusual symmetric arrangement of the regulatory region." Mol Gen Genet. 1992 Jun;233(3):483-486	
	A119	Kochhar et al., "Lysine-induced premature transcription termination in the lysC operon of Bacillus subtilis." Microbiology. 1996 Jul;142 (Pt 7):1635-1639	
	A120	Kreneva, et al., "Study of the phenotypic occurrence of ura gene inactivation in Bacillus subtilis" Genetika. 2000 Aug;36(8):1166-1168 Russian (no translation)	
	A121	Kumar and Ellington, "Artificial evolution and natural ribozymes," FASEB J. 9:1183-1195	
	A122	L'Huillier et al. "Cytoplasmic Delivery of Ribozymes leads to efficient reduction in alpha-lactalbumin mRNA levels in C1271 mouse" EMBO J. 11:4411-4418 (1992)	
	A123	Landick et al., "Quantitative analysis of transcriptional pausing by Escherichia coli RNA polymerase: his leader pause site as paradigm." Methods Enzymol. 1996;274:334-353.	
	A124	Lasic and Needham, "The stealth liposome: a prototypical biomaterial," Chem. Rev. 95:2601-2627 (1995)	
	A125	Lasic and Paphajopoulos, "Liposomes revisited," Science 267:1275-1276 (1995)	
	A126	Lauhon and Szostak, "RNA aptamers that bind flavin and nicotinamide redox cofactors." J Am Chem Soc. 1995 Feb 1;117(4):1246-1257	
	A127	Lee et al., "RNA expression analysis using an antisense Bacillus subtilis genome array." J Bacteriol. 2001 Dec;183(24):7371-7380	
	A128	Leontis and Westhof, "A common motif organizes the structure of multi-helix loops in 16 S and 23 S ribosomal RNAs." J Mol Biol. 1998 Oct 30;283(3):571-583.	
	A129	Li and Breaker "Deoxyribozymes: new players in the ancient game of biocatalysis" Cur. Opin. Struct. Bio. 9:315-323 (1999)	
	A130	Li and Breaker "In vitro Selection of Kinase and Ligase Deoxyribozymes." Methods (2001) 23:179-190	
	A131	Li and Breaker, "Kinetics of RNA degradation by specific base catalysts of transesterification involving the 2'-hydroxyl group," J. Am. Chem. Soc. 121:5364-5372 (1999)	
	A132	Li and Sen "A catalytic DNA for porphyrin metallation" Nat. Struct. Biol. 3:743-747 (1996).	
	A133	Liao and Hseu, "Analysis of the regulatory region of the lysC gene of Escherichia coli." FEMS Microbiol Lett. 1998 Nov 1;168(1):31-36	
	A134	Lieber et al. "Stable high level gene expression in mammalian cells by T7 phage RNA polymerase" Methods Enzymol. 217:47-66 (1993)	
	A135	Limbach et al., "Summary: the modified nucleosides of RNA," Nucleic Acids Res. 22(12):2183-2196 (1994)	
	A136	Liszewicz et al., "Inhibition of human immunodeficiency virus type 1 replication by regulated expression of a polymeric tat activation response RNA decoy as a strategy for gene therapy in AIDS," Proc. Natl. Acad. Sci. 90:8000-8004 (1993)	
	A137	Liu et al., "Cationic liposome mediated intravenous gene delivery" J. Biol. Chem. 270(42):24864-24870 (1995)	
	A138	Long and Uhlenback, "Kinetic characterization of intramolecular and intermolecular hammerhead RNAs with stem II deletions," Proc. Natl. Acad. Sci. 91:6977-6981 (1994)	
✓	A139	Lu et al., "Fine-structure mapping of cis-acting control sites in the lysC operon of Bacillus subtilis." FEMS Microbiol Lett. 1992 Apr 1;71(1):23-27	

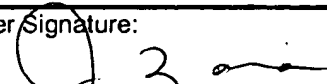
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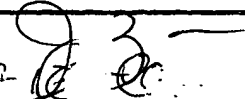
83	A140	Lu et al., "Identification of aecA mutations in Bacillus subtilis as nucleotide substitutions in the untranslated leader region of the aspartokinase II operon." J Gen Microbiol. 1991 May;137(Pt 5):1135-1143
	A141	Lundrigan and Kadner, "Altered cobalamin metabolism in Escherichia coli btuR mutants affects btuB gene regulation." J. Bacteriol. 171:154-161 (1989)
	A142	Lundrigan et al., "Transcribed sequences of the Escherichia coli btuB gene control its expression and regulation by vitamin B ₁₂ " Proc. Natl. Acad. USA 88:1479-1483 (1991)
	A143	Ma et al "Design and synthesis of RNA mniduplexes via a synthetic linker approach," Biochemistry 32:1751-1758 (1993)
	A144	Ma et al. "Design and synthesis of RNA mniduplexes via a synthetic linker approach. 2. Generation of covalently closed, double-stranded cyclic HIV-1 TAR RNA analogs with high tat-binding affinity," Nucleic Acids Res. 21:2585-2589 (1993)
	A145	Mäder, et al., "Transcriptome and proteome analysis of Bacillus subtilis gene expression modulated by amino acid availability." J Bacteriol. 2002 Aug;184(15):4288-4295
	A146	Mandal, et al, "Riboswitches control fundamental biochemical pathways in Bacillus subtilis and other bacteria." Cell. 2003 May 30;113(5):577-586
	A147	Manoharan "2'-carbohydrate modifications in antisense oligonucleotide therapy: importance of conformation, configuration and conjunction." Biochem Biophys. Acta 1489(1):117-130 (1999)
	A148	Mansilla, et al., "Transcriptional control of the sulfur-regulated cysH operon, containing genes involved in L-cysteine biosynthesis in Bacillus subtilis." J Bacteriol. 2000 Oct;182(20):5885-5892
	A149	Mathews et al., "Expanded sequence dependence of thermodynamic parameters improves prediction of RNA secondary structure." J. Mol. Biol. 288, 911-940 (1999))
	A150	Matthews and Nichols, "Lactose repressor protein: functional properties and structure." Prog Nucleic Acid Res Mol Biol. 1998;58:127-164
	A151	McCall et al. "Minimal sequence requirements for ribozyme activity" Proc. Natl Acad. Sci. 89:5710-5714 (1992)
	A152	McConnell et al., "Guanosine binding to the Tetrahymena ribozyme: thermodynamic coupling with oligonucleotide binding." Proc Natl Acad Sci U S A. 1993 Sep 15;90(18):8362-8366
	A153	McCurdy et al. "Deoxyoligonucleotides with inverted polarity : synthesis and use in triple-heliz formation." Nucleoside & Nucleotides 10:287-290 (1991)
	A154	McGarry and Linquist, "Inhibition of heat shock protein synthesis by heat-inducible antisense RNA," Proc. Natl. Acad. Sci. 83:399-403 (1986)
	A155	Mesmaeker et al, "Novelbackbone replacements for oligonucleotises" Am. Chem. Soc. 24-39 (1994)
	A156	Michels and Pyle, Conversation of group II intron into a new multiple turnover ribozyme that selectively cleaves olgonucleotides: elucidation of reaction mechanism and structure/function relationships" Biochemistry 34:3965-3977 (1995)
	A157	Milligan and Uhlenbeck, "Synthesis of small RNA s using T7 RNA polymerase" Methods Enzymol. 180:51-62 (1989)
	A158	Miranda-Rios et al., "A conserved RNA structure (thi box) is involved in regulation of thiamin biosynthetic gene expression in bacteria" Proc. Natl. Acad. Sci. USA 98, 9736-9741 (2001)
	A159	Mironov et al., "Functional organization of the riboflavin biosynthesis operon from Bacillus subtilis SHgw." Mol Gen Genet. 1994 Jan;242(2):201-208

Examiner Signature: 	Date Considered: 12-17-06
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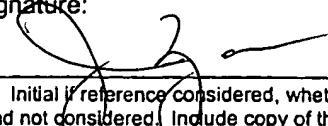
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			Confirmation No:	4368
			Examiner Name	Unassigned
83	A160	Mironov et al., "Sensing small molecules by nascent RNA: a mechanism to control transcription in bacteria." <i>Cell</i> . 2002 Nov 27;111(5):747-756		
	A161	Moore and Sharp, "Site specific modification of Pre-mRNA: the 2'-hydroxyl groups at the splice sites" <i>Science</i> 256:992-996 (1992)		
	A234	Moszer et al., "SubList: the reference database for <i>Bacillus subtilis</i> gene" <i>Nucleic Acids Research</i> 2002, 30, 62-		
	A162	Murphy McDaniel, et al., "Transcription termination control of the S box system: direct measurement of S-adenosylmethionine by the leader RNA." <i>Proc Natl Acad Sci U S A</i> . 2003 Mar 18;100(6):3083-3088		
	A163	Murphy, et al., "Prediction of gene function in methylthioadenosine recycling from regulatory signals." <i>J Bacteriol</i> . 2002 Apr;184(8):2314-2318		
	A205	Nakamura et al "High-affinity taurine uptake and its regulation by protein kinase C in human glioma cells." <i>Adv Exp Med Biol</i> . 1996;403:377-84.		
	A164	Nathans and Smith, "Restriction endonucleases in the analysis and restructuring of DNA molecules," <i>Ann. Rev. Biochem.</i> 44:273-293 (1975)		
	A165	Noonberg. Et al. "In vivo generation of high abundant sequence-specific oligonucleotides for antisense and triplex gene regulation" <i>Nucleic Acids Res.</i> 22(14):2830-2836 (1994)		
	A166	Nou & Kadner, "Adenosylcobalamin inhibits ribosome binding to <i>btuB</i> RNA." <i>Proc. Natl. Acad. Sci. USA</i> 97:7190-7195 (2000)		
	A167	Nudler and. Gottesman, "Transcription termination and anti-termination in <i>E. coli</i> genes." <i>Cells</i> . 2002 Aug;7(8):755-768		
	A168	Nudler et al. "The riboswitch control of bacterial metabolism" <i>Trends in Biochem Sci.</i> 29(1):11-17 (2004)		
	A169	Ohkawa et al. "Activities of HIV-RNA targeted ribozymes transcribed from a shot gun type ribozyme trimming plasmid" <i>Nucleic Acids Symp. Ser.</i> 27:15-16 (1992)		
	A170	Ojwang et al. "Inhibition of human immunodeficiency virus type 1 expression by hairpin ribozyme" <i>Proc. Natl Acad. Sci.</i> 89:10802-10806 (1992)		
	A171	Oku et al. "Real-time analysis of liposomal trafficking in tumor-bearing mice by use of positron emission tomography" <i>Biochimica et Biophysica Acta.</i> 1238:86-90 (1995)		
	A172	Ono et al. "DNA triplex formation of oligonucleotide analogues consisting of linker groups and octamer segments that have opposite sugar-phosphate backbone polarities" <i>Biochemistry</i> 30:9914-9921 (1992)		
	A173	Orgel et al. "Selection in vitro" <i>Proc. R. Soc. London B.</i> 205:435-442 (1979)		
	A174	Pan et al. "Properties of an in vitro selected Pb2+ Cleavage motif" <i>Biochemistry</i> 33:9561-9564 (1994)		
	A175	Patte, et al., "The leader sequence of the <i>Escherichia coli</i> <i>lysC</i> gene is involved in the regulation of <i>LysC</i> synthesis." <i>FEMS Microbiol Lett.</i> 1998 Dec 1;169(1):165-170		
	A176	Perreault et al. "Mixed deoxyribo- and ribo-oligonucleotides with catalytic activity" <i>Nature</i> 344:565-567 (1990)		
	A177	Pieken et al. "Kinetic characterization of ribonuclease-resistant 2'-modified hammerhead ribozymes," <i>Science</i> 253:14-317 (1991)		
✓	A178	Ravnum and Andersson, "An adenosyl-cobalamin (coenzyme-B ₁₂)-repressed translational enhancer in the <i>cob</i> mRNA of <i>Salmonella typhimurium</i> ." <i>Mol. Microbiol.</i> 39:1585-1594 (2001)		

Examiner Signature: 	Date Considered: 12-17-06
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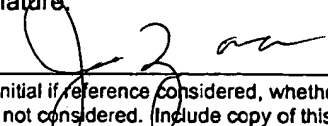
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		Filing Date	September 22, 2003
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		Examiner Name	Unassigned
83	A179	Richardson and Schepartz, "Tethered oligonucleotide probes. A strategy for the recognition of structured RNA," J. Am. Chem. Soc. 113:5109-5111 (1991)	
	A180	Richardson, "Rho-dependent termination and ATPases in transcript termination." Biochim Biophys Acta. 2002 Sep 13;1577(2):251-260	
	A181	Rossi et al., "Molecular Biology: ribozymes in the nucleolus" Science 285:1685 (1999)	
	A182	Roth and Breaker, "An amino acid as a cofactor for a catalytic polynucleotide" PNAS 95:6027-6031 (1998)	
	A183	Roychowdhury-Saha, et al., "Flavin recognition by an RNA aptamer targeted toward FAD." Biochemistry. 2002 Feb 26;41(8):2492-2499	
	A184	Ruffner et al. "Sequence requirements of the hammerhead RNA self-cleavage reaction," Biochemistry 29:10695-10702 (1990)	
	A185	Sarver et al "Ribozymes as potential anti-HIV-1 therapeutic agents" Science 247:1222-1225 (1990)	
	A186	Scanlon et al "Ribozyme-mediated cleavage of c-fos mRNA reduces gene expression of DNA synthesis enzymes and metallothionein" Proc. Natl. Acad. Sci. 88:10591-10595 (1991)	
	A187	Scaringe et al "Chemical synthesis of biologically active oligoribonucleotides using beta-cyanethyl protected ribonucleoside phosphoramidites." Nucleic Acids Res. 18:5433-5441 (1990)	
	A188	Seela and Kaiser "Oligodeoxyribonucleotides containing 1,3 propanediol as nucleoside substitute" Nuc. Acids. Res. 15:3113-3129 (1987)	
	A189	Seetharaman et al., "Immobilized riboswitches for the analysis of complex chemical and biological mixtures." Nature Biotechnol. 19:336-341 (2001)	
	A190	Shabarova et al "Chemical ligation of DNA: the first non-enzymatic assembly of a biologically active gene," Nucleic Acids. Res. 19:4247-4251 (1991)	
	A191	Shu and Guo, "A viral RNA that binds ATP and contains a motif similar to an ATP-binding aptamer from SELEX." J Biol Chem. 2003 Feb 28;278(9):7119-7125	
	A192	Soukup & Breaker, "Engineering precision RNA molecular switches". Proc. Natl. Acad. Sci. USA 96:3584-3589 (1999)	
	A193	Soukup and Breaker "Nucleic Acid Molecular Switches." Trends Biotechnol. (1999) 17:469-476	
	A194	Soukup and Breaker "Relationship between internucleotide linkage geometry and the stability of RNA" RNA 5:1308-1325 (1999)	
	A195	Soukup and Breaker, "Allosteric nucleic acid catalysts." Curr. Opin. Struct. Biol. 10:318-325 (2000)	
	A196	Soukup et al., "Generating new ligand-binding RNAs by affinity maturation and disintegration of allosteric ribozymes." RNA 7, 524-536 (2001)	
	A197	Stormo and Ji, "Do mRNAs act as direct sensors of small molecules to control their expression?" Proc Natl Acad Sci U S A. 2001 Aug 14;98(17):9465-9467	
	A198	Stulke, "Control of transcription termination in bacteria by RNA-binding proteins that modulate RNA structures." Arch Microbiol. 2002 Jun;177(6):433-440	
A199	Sudarsan, et al., "Metabolite-binding RNA domains are present in the genes of eukaryotes." RNA. 2003 Jun;9(6):644-647		
A200	Sugiyama et al. "Catalytic activities of hammerhead ribozymes with a triterpenoid linker instead of stem/loop II" FEBS Letters 392:215-219 (1996)		

Examiner Signature: 	Date Considered: 12-17-06
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83	A201	Sullenger and Cech "Tethering ribozymes to a retroviral packaging signal for destruction of viral RNA" Science 262:1566-1569 (1993)	
	A202	Switzer, et al., "Regulation of the Bacillus subtilis pyrimidine biosynthetic operon by transcriptional attenuation: control of gene expression by an mRNA-binding protein." Prog Nucleic Acid Res Mol Biol. (1999)62:329-367	
	A203	Szostak and Elington "Ch. 20-In vitro selection of functional RNA sequences," In RNA world ed. Geterland and Atkins, Cold Spring Harbor Laboratory Press pp. 511-533 (1993)	
	A204	Szostak, "in vitro genetics" TIBS 17:89-93 (1992)	
	A210	Taira et al. "construction of a novel RNA-transcript-trimming plasmid which can be used both in vitro in place of run-off and (G) free transcriptions and in vivo as multi sequences transcription vectors" Nucleic Acid. Res. 19:5125-5130 (1991)	
	A206	Tamm et al., "Anit sense therapy in oncology: new hope for an old idea?" The Lancet 2001, Aug. 358:489-497	
	A207	Tang and Breaker "Examination of the catalytic fitness of the hammerhead ribozyme by in vitro selection" RNA 3:914-925 (1997)	
	A208	Thompson et al "Improved accumulation and activity of ribozymes expressed from a tRNA-based RNA polymerase III promoter" Nucl. Acids Res. 23:2259-2269 (1995)	
	A209	Thomson et al "In vitro selection of hammerhead ribozymes containing a bulged nucleotide in stem II" Nuc. Acid. Res. 24:4401-4406 (1996)	
	A211	Turner et al "Free energy increments for hydrogen bonds in nucleic acid base pairs" J. Am. Chem. Soc 109:3783-3785 (1987)	
	A212	Turner et al "Improved parameters for prediction of RNA structure" Cold Spring Harbor Symposia on Quantitative Biology vol LII pp. 123-133 (1987)	
	A213	Usher, "On the mechanism of ribonuclease action." Proc. Natl. Acad. USA 62:661-667 (1969)	
	A214	Usman and Cedergren "Exploiting the chemical synthesis of RNA" TIBS 17:334-339 (1992)	
	A215	Usman and McSwiggen "Ch 30-Catalytic RNA (ribozymes) as drugs" annual reports in medicinal Chem. 30:285-294 (1995)	
	A216	Usman et al "Chemical modification of hammerhead ribozymes:activity and nuclease resistance" Nucleic Acids Symposium Series 31:163-164 (1994)	
	A217	Usman et al. " Automated chemical synthesis of long oligoribonucleotides using 2'-O-silylated ribonucleoside 3'-O-phosphoraidites on a controlled pore glass support: synthesis of a 43-nucleotide sequence similar to the 3'half molecule of an Escherichia coli formylmethoionine tRNA" J. Am. Chem. Soc. 109:7845-7854 (1987)	
	A218	Vaish et al "In vitro selection of a purine nucleotide-specific hammerhead-like ribozyme" Proc. Natl. Acad. Sci. 95:2158-2162 (1998)	
	A219	Vander Horn et al., "Structural genes for thiamine biosynthetic enzymes (thiCEFGH) in Echerichia coli K-12." J. Bacteriology 175:982-992 (1993)	
	A220	Ventura et al "Activation of HIV-specific ribozyme activity by self-cleavage" Nuc. Acids. Res. 21:3249-3255 (1993)	
	A221	Vold et al. "Regulation of dihydrodipicolinate synthase and aspartate kinase in Bacillus subtilis." J Bacteriol. 1975 Mar;121(3):970-974	
	A222	Webb & Downs, "Characterization of thIL, encoding thiamin-monophosphate kinase, in Salmonella typhimurium." J. Biol. Chem. 272:15702-15707 (1997)	

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		Examiner Name	Unassigned
93	A223	Webb et al., "Thiamine pyrophosphate (TPP) negatively regulates transcription of some thi genes of Salmonella typhimurium." J. Bacteriol. 178, 2533-2538 (1996)	
	A224	Weerasinhe et al "Resistance to Human immunodeficiency virus using type 1 (HIV-1) infection in human CD4+ lymphocyte derived cell lines conferred by using retroviral vectors expressing an HIV-1 RNA-specific ribozyme" J. of Virology 65:5531-5534 (1994)	
	A225	Wei et al., "Conserved structural and regulatory regions in the Salmonella typhimurium btuB gene for the outer membrane vitamin B12 transport protein." Res Microbiol. 1992 Jun;143(5):459-466	
	A226	Weng, et al., "Identification of the Bacillus subtilis pur operon repressor." Proc Natl Acad Sci U S A. 1995 Aug 1;92(16):7455-7459	
	A227	Werner and Uhlenbeck "The effect of base mismatches in the substrate recognition helices of hammerhead ribozymes on binding and catalysis" Nucl. Acids. Res. 23:2092-2096 (1995)	
	A228	Werstuck and Green, "Controlling gene expression in living cells through small molecule-RNA interactions," Science 282:296-298 (1998)	
	A229	Wilson & von Hippel, "Transcription termination at intrinsic terminators: the role of the RNA hairpin." Proc Natl Acad Sci U S A. 1995 Sep 12;92(19):8793-8797	
	A230	Wincott et al "A practical method for the production of RNA and ribozymes" Methods in Mol. Biology 74:59-69 (1997)	
	A231	Wincott et al. "Synthesis, deprotection, analysis and purification of RNA and ribozymes" Nuc. Acids. Res. 23(14):2677-2684 (1995)	
	A232	Winkler et al. "A mRNA structure that controls gene expression by binding FMN" Proc. Natl. Acad. Sci 99(25):15908-15913(2002)	
	A233	Winkler et al. "Thiamine derivatives bind messenger RNAs directly to regulate bacterial gene expression" Nature 419:952-956 (2002)	
	A234	Yu et al "A hairpin ribozyme inhibits expression of diverse strains of human immunodeficiency virus type 1" Proc. Natl. Acad. Sci. 90:3640-6344 (1993)	
	A235	Zaug et al "The tetrahymena ribozyme acts like an RNA restriction endonuclease" Nature 324:429-433 (1986)	
	A236	Zhou et al. "Synthesis of functional mRNA in Mammalian cells by bacteriophage T3 RNA polymerase" Mol Cell. Biol. 10:4529-4537 (1990)	
✓	A237	Zuker "On finding all suboptimal foldings of an RNA molecule" Science 244:48-52 (1989)	

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